

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a semiconductor substrate;

5 at least one layer of a first insulating film formed above the semiconductor substrate and having a relative dielectric constant of 3.8 or less, an entire layer of the first insulating film being separated at least near four corners of the semiconductor substrate by a lacking portion that extends along the four corners;

10 and

a second insulating film covering a side face of the entire layer of the first insulating film in the lacking portion on a center side of the semiconductor substrate and having a relative dielectric constant of over 3.8.

15 2. A semiconductor device as set forth in claim 1, wherein the lacking portion in the first insulating film is formed near an entire peripheral edge of the semiconductor substrate.

3. A semiconductor device as set forth in claim 1, wherein the second insulating film covers a side face of the entire layer
20 of the first insulating film in the lacking portion also on a peripheral edge side of the semiconductor substrate.

4. A semiconductor device as set forth in claim 1, further comprising a conductor film layered on the second insulating film in the lacking portion.

25 5. A semiconductor device as set forth in claim 4, further comprising a third insulating film layered on the conductor film and having a relative dielectric constant of over 3.8

6. A semiconductor device as set forth in claim 1,

wherein the second insulating film also covers a top face of the first insulating film, and the semiconductor device further comprising

5 a conductor pattern passing through the second insulating film on the top face of the first insulating film.

7. A semiconductor device as set forth in claim 6, further comprising a conductor pattern buried in the first insulating film.

8. A semiconductor device as set forth in claim 6, wherein the conductor pattern contains copper.

10 9. A semiconductor device as set forth in claim 1, wherein the first insulating film is constituted of a plurality of layers.

10. A semiconductor device as set forth in claim 1, wherein the lacking portion in the first insulating film has a width of 0.5 μm or more.

15 11. A semiconductor device as set forth in claim 1, wherein the first insulating film on a peripheral edge side of the semiconductor substrate has a width of 0.5 μm or more from the lacking portion.

20 12. A semiconductor device as set forth in claim 1, wherein a side of the lacking portion in the first insulating film has a length of 1 mm or more.

13. A semiconductor device comprising:

a semiconductor substrate;

25 at least one layer of a first insulating film formed above the semiconductor substrate and having a relative dielectric constant of 3.8 or less, an entire layer of the first insulating film being separated at least near four corners of a semiconductor chip by a lacking portion that extends along the four corners; and

a second insulating film formed in the lacking portion and on the first insulating film and having a relative dielectric constant of over 3.8.

14. A semiconductor device as set forth in claim 13, wherein
5 the lacking portion in the first insulating film is formed near an entire peripheral edge of the semiconductor chip.

15. A semiconductor device as set forth in claim 13, further comprising a conductor film layered on the second insulating film in the lacking portion.

10 16. A semiconductor device as set forth in claim 15, further comprising a third insulating film layered on the conductor film and having a relative dielectric constant of over 3.8.

17. A semiconductor device as set forth in claim 13, wherein the first insulating film is constituted of a plurality of layers.

15 18. A semiconductor device as set forth in claim 13, wherein the lacking portion in the first insulating film has a width of 0.5 μm or more.

19. A semiconductor device as set forth in claim 13, wherein the first insulating film between the lacking portion and a
20 peripheral edge of the semiconductor chip has a width of 0.5 μm or more from the lacking portion.

20. A semiconductor device as set forth in claim 13, wherein a side of the lacking portion in the first insulating film has a length of 1 mm or more.

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